



Application No.: 09/781,073

REMARKS/ARGUMENTS

RECEIVED
SEP 17 2003
TC 1700

The Office Action mailed June 27, 2003 has been carefully reviewed. Reconsideration of this application, as amended and in view of the following remarks, is respectfully requested. Applicants have elected group II, claims 13-25 for examination in this application. The non-elected claims are group I, claims 1-12 and group III, claims 26-34. Applicants withdrew/canceled claims 1-12 and 26-34 subject to Applicants right to file divisional applications covering the inventions of claims 1-12 and 26-34. The claims presented for examination are claims 13-25.

35 USC 102 Rejection

In numbered paragraph 2 of the Office Action mailed June 27, 2003, claims 13, 19, and 21-25 were rejected under 35 USC 102(b) as being anticipated by the Durham (US 6,070,813) reference. Applicants respectfully traverse the rejection of claims 13, 19, and 21-25 under 35 USC 102(b).

The present claimed invention provides a method of rapidly drilling a hole so that the hole has a final desired diameter. In the first step, a first high power percussive laser beam is focused to a first high power percussive laser beam spot diameter that is slightly smaller than the final desired diameter of the hole. The first high power percussive laser beam is directed to remove the bulk of the material to form a ragged hole having a diameter slightly smaller than said final diameter of the hole and is accomplished by using said first high power percussive laser beam spot diameter to directly form said ragged hole without trepanning. In the next step, a second and trepanning laser beam is generated having a spot diameter substantially smaller than the diameter of the desired hole and the second and trepanning laser beam is directed and traced along the hole being formed for expanding the ragged hole so that the hole is at the final

diameter and for accurately cleaning up the ragged hole so that the final hole has the final desired diameter and has dimensions of high precision.

In contrast, the Durham reference uses two trepanning laser beams. The first trepanning laser beam has a spot diameter of approximately 20 microns whereas the final diameter of the hole is approximately 150 microns. The first trepanning laser beam is repeatedly traced around a point to drill a circular raceway and ultimately form an initial hole. The second trepanning laser beam is the used to enlarge the initial hole.

The Durham reference fails to disclose the steps of the claimed invention. For example, the Durham reference fails to disclose the claimed steps of: "generating a first high power percussive laser beam, said high power percussive laser beam being focused to a first high power percussive laser beam spot diameter that is slightly smaller than said final diameter of said hole," or "directing said first high power percussive laser beam at said material to remove the bulk of said material to form a ragged hole having a diameter slightly smaller than said final diameter of said hole, said step of directing said first high power percussive laser beam at said material to remove the bulk of said material to form a ragged hole being accomplished by using said first high power percussive laser beam spot diameter to directly form said ragged hole without trepanning."

The system of the Durham reference does not accomplish the benefits of the claimed invention. The present invention rapidly drills a hole using a first high power percussive laser beam to remove the bulk of the material and form a ragged hole. The ragged hole is accurately cleaned up by using trepanning laser beam for expanding the ragged hole to the final desired diameter with dimensions of high precision.

Applicants respectfully submit that the Durham reference does not show the steps of claims 13, 19, and 21-25. As stated in Verdegaal Bros. v. Union Oil

Co. of California, 814 F.2nd 628, 631 USPQ 1051, 1053 (Fed. Cir. 1987), "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference." Since the structural elements of the claims now presented for examination are not shown by the Durham reference, the rejection is unsupported by the art and should be withdrawn.

35 USC 103 Rejection

In numbered paragraph 5 of the Office Action mailed June 27, 2003, claims 14-18 and 20 were rejected under 35 USC 103(a) as allegedly being unpatentable over the Durham reference in view of Inagawa et al (US 5,166,493).

Applicants respectfully traverse the rejection of claims 14-18 and 20 under 35 USC 103(a). As explained above in connection with the 35 USC 102(b) rejection, the Durham reference fails to disclose the enumerated steps of the claimed invention. Also, the Durham and Inagawa et al references do show the claimed combination. There is no teaching or suggestion in the references to form a proper combination. The cited references do not provide a teaching of the claimed combination.

The Durham reference teaches away from a combination of the Durham reference and other references. In the Durham reference two trepanning laser beams are utilized. This allows low power trepanning laser beams (only) to be used. The purpose of the Durham reference is to use two trepanning laser beams therefore it teaches away from using anything other than trepanning laser beams.



Application No.: 09/781,073

RECEIVED
SEP 17 2003
TC 1700

SUMMARY

The undersigned respectfully submits that in view of the foregoing amendments and the remarks, the rejections of the claims raised in the Office Action dated June 27, 2003 have been fully addressed and overcome. The present application is believed to be in condition for allowance. It is respectfully requested that this application be reconsidered, that the claims be allowed, and that this case be passed to issue. If it is believed that a telephone conversation would expedite the prosecution of the present application, or clarify matters with regard to its allowance, the Examiner is invited to call the undersigned attorney at (925) 424-6897.

Respectfully submitted,

Eddie E. Scott
Attorney for Applicant
Registration No. 25,220
Tel. No. (925) 424-6897

Livermore, California

Dated: September 11, 2003